

Claims

What is claimed is:

1. A method for automated analysis of signaling link utilization, the method comprising:
  - 5 (a) copying signaling messages from a plurality of different signaling links and storing the signaling messages in a signaling message database;
  - (b) generating signaling link utilization data based on the data stored in the database;
  - 10 (c) displaying a signaling link utilization screen to a user, the signaling link utilization screen including signaling link utilization data for a plurality of different signaling links;
  - (d) receiving input from the user via the link utilization screen regarding a portion of the signaling link utilization data that the user desires to  
15 analyze;
  - (e) automatically extracting signaling message data corresponding to the selected signaling link utilization data from the signaling message database; and
  - (f) displaying the signaling message data to the user via a computer  
20 display device.
2. The method of claim 1 wherein copying signaling messages includes copying SS7 signaling messages.

3. The method of claim 1 wherein copying signaling messages includes copying IP telephony signaling messages.
4. The method of claim 1 wherein generating signaling link utilization data includes generating data indicative of signaling messages that traverse  
5 the signaling links in a predetermined time period.
5. The method of claim 1 wherein displaying the signaling link utilization data to a user includes displaying the signaling link utilization data to the user in graphical format.
6. The method of claim 1 wherein displaying the signaling link utilization data  
10 to the user includes displaying the signaling link utilization data to the user in tabular format.
7. The method of claim 1 wherein receiving input from the user regarding a portion of the link utilization data that the user desires to analyze includes receiving coordinates on a signaling link utilization graph selected by the  
15 user and determining signaling link utilization data corresponding to the selected coordinates.
8. The method of claim 1 wherein automatically extracting the signaling message data includes automatically launching a protocol analysis application from the signaling link utilization screen in response to the  
20 input from the user.
9. The method of claim 1 wherein displaying the signaling message data to the user via a computer display device includes displaying copies of signaling messages corresponding to the link utilization data to the user.

10. The method of claim 1 wherein displaying the signaling message data to the user via a computer display device includes displaying predetermined fields from signaling message data corresponding to the selected link utilization data to the user.
- 5 11. The method of claim 1 wherein the selected link utilization data and the corresponding signaling message data consist of data for a single signaling link.
12. A system for automated analysis of signaling link utilization, the system comprising:
  - 10 (a) a message copy function for copying signaling messages from a plurality of different signaling links;
  - (b) a link utilization application operatively associated with the message copy function for generating link utilization data based on the copied signaling messages and for displaying the link utilization  
15 data to the user via a link utilization screen; and
  - (c) an automated link utilization analyzer operatively associated with the link utilization application for receiving input from the user via the link utilization screen regarding link utilization data desired to be analyzed and for, in response to the input from the user,  
20 automatically extracting corresponding signaling message information from a database and displaying the extracted signaling message information to the user.

13. The system of claim 12 wherein the message copy function is internal to a signaling message routing node.
14. The system of claim 12 wherein the message copy function is located on a stand-alone network monitoring platform.
- 5 15. The system of claim 12 wherein the link utilization application is adapted to count the number of signaling messages traversing each of the signaling links in a predetermined time period.
16. The system of claim 12 wherein the link utilization application is adapted to display the signaling link utilization data to the user in graphical format.
- 10 17. The system of claim 12 wherein the link utilization application is adapted to display the link utilization data to the user in tabular format.
18. The system of claim 12 wherein the automated link utilization analyzer is adapted to extract signaling message copies from the database and display the signaling message copies to the user.
- 15 19. The system of claim 12 wherein the automated link utilization analyzer is adapted to display selected fields from copied signaling messages to the user.
20. The system of claim 12 wherein the automated signaling link analyzer is adapted to automatically launch, from the link utilization screen, a protocol  
20 analysis application for extracting the signaling message information.
21. The system of claim 12 wherein the selected link utilization data and the corresponding signaling message data consist of data regarding a single signaling link.

22. A computer program product for automated analysis of signaling link utilization, the computer program product comprising computer-executable instructions embodied in a computer-readable medium for performing steps comprising:

- 5 (a) displaying signaling link utilization data regarding utilization of a plurality of different signaling links to a user via a link utilization screen;
- (b) receiving input from the user via the link utilization screen regarding a portion of the signaling utilization data that the user desires to  
10 analyze;
- (c) automatically extracting signaling message data corresponding to the selected signaling link utilization data from a signaling message database; and
- (d) displaying the extracted signaling message data to the user via a  
15 computer display device.

23. The computer program product of claim 22 wherein displaying signaling link utilization data includes displaying data indicative of signaling messages that traverse the signaling link in a predetermined time period.

24. The computer program product of claim 22 wherein displaying the  
20 signaling link utilization data to a user includes displaying the signaling link utilization data to the user in graphical format.

25. The computer program product of claim 22 wherein displaying the signaling link utilization data to the user includes displaying the signaling link utilization data to the user in tabular format.

5 26. The computer program product of claim 22 wherein receiving input from the user regarding a portion of the link utilization data that the user desires to analyze includes receiving a point on a signaling link utilization graph selected by the user and determining signaling link utilization data closest to the point.

10 27. The computer program product of claim 22 wherein automatically extracting the signaling message data includes automatically launching a protocol analysis application from the signaling link utilization screen in response to receiving the input from the user.

15 28. The computer program product of claim 22 wherein displaying the signaling message data to the user via computer display device includes displaying copies of signaling messages corresponding to the link utilization data to the user.

20 29. The computer program product of claim 22 wherein displaying the signaling message data to the user via the computer display device includes displaying selected fields from the signaling message data to the user.